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Maine Agricultural Experiment Station

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THREE PINK AND GREEN APHIDS OF THE ROSE.

ISSUED
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This Bulletin contains a brief account of certain Rose aphids; and Part VI of the Aphid Food Plant Catalouge, including plants from the Dogwood Family to the Nightshade Family.

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ORONO, MAINE

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BULLETIN 282

THREE PINK AND GREEN APHIDS OF THE ROSE*

EDITH M. PATCH

For many years after Linnaeus gave "the" rose aphid the specific name of *rosae,* this term proved sufficiently elastic to embrace all the large green or pink aphids found upon the rose. Just how many of these there may prove to be when the subject has been entirely covered it is still too soon to say.

It is certain, however, that there are at least three species of the genus *Macrosiphum* common on the rose in Maine and that each of these has two distinct color varieties, one pink and one green.

Of these *M. rosae* proper is not known to migrate and it does maintain a continuous residence upon the rose. This circumstance would not preclude the possibility that it has a secondary food plant which is used as a summer resort for it is not uncommon for a species with a definite spring and fall migration to and from the summer food plant to continue also to colonize its primary food plant (that upon which the overwintering egg is placed) during the summer months.

The second of the pink and green rose aphids, *Macrosiphum solanifolii,* also deposits its eggs upon the rose in the fall where it may be found in heavy colonies during the spring and early summer, when it migrates for the most part to a great variety of summer plants, though it may, besides, keep up its connection with the rose during the summer. In Maine, and in perhaps most other parts of the United States, this species works greater havoc in potato fields than on other vegetation.

The heavy infestation of the potato may be encouraged by the well nigh universal abundance of these plants putting forth their most succulent growth at the time *M. solanifolii* migrates from the rose; and its threat against this crop is evidently a

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two-fold one,—the direct damage due to its feeding habits, and its indirect but possibly even more serious harm of serving as a carrier of potato disease.*

As there are, at present, no items concerning *M. rosae* in Maine which are different from those available in publications from other sources; and as *M. solanifolii* has already appeared in several bulletins of this Station, the present account will concern chiefly the third pink and green aphid of the rose which is here described as a new species though it may prove to have an old world name when its geographical distribution and food plants are better known.

MACROSIPHUM PSEUDOROSAE N. SP.

Alate viviparous female: General color polished rose red or green. Beak short and stout. Antennae black, so heavily pigmented that it is difficult to prepare a mount which shows the distribution of the sensoria; III with 14 more or fewer sensoria in a row extending usually about five-sixths its length; IV without sensoria; the relative lengths of segments III to VI may be indicated; 13, 11, 8, 2+13. Fore wing with veins slender and about uniform. Second joint of 1st tarsus excluding claw about three-fourths length of base of VI. Cornicle deep black, usually not much shorter than III or anal vein of fore wing, though considerable variation is possible, and reticulated for about one-fifth its length. Cauda yellowish.

Apterous viviparous female: General color same as in the alate female, both color varieties being common. Antenna with single row of sensoria extending about half the length of III, sometimes farther. (See also remarks on reared individuals p. 208).

Descriptions of both of the foregoing are from wild rose material collected July 19, 1918 by Mr. George Blodget. Cotype slides in the collection of the Maine Agricultural Experiment Station, 173-18 and 176-18.

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*Investigations on the Mosaic Disease of the Irish Potato by E. S. Schultz, Donald Folsom, F. Merrill Hilderbrandt and Lon A. Hawkins. Journal of Agricultural Research, Vol. XVII, No. 6. Washington, D. C., Sept. 15, 1919.

My attention was first directed to this species by a collection made by Mr. George L. Blodget from golden ragwort (*Senecio aureus* L.) July 3, 1918. This material was mixed with *Macrosiphum solanifolii* from which it was easily separated by its black antenna and cornicle. A second search in the same locality revealed the fact that both these species were also present on the numerous wild roses on the bank of the Penobscot very near the ragwort.

Of course the next step was obvious and preparations were made for transfer tests from wild rose to ragwort. The potted plants of ragwort were slow in getting a start and only the rosettes of basal leaves remained fresh for the duration of the test.

By July 24, these plants seemed in safe condition to use and on that date two viviparous females of the pink color variety were removed from wild rose and caged on the ragwort. One was apterous and the other alate, and both were somewhat restless during the first day, a condition accounted for, perhaps, by the fact that the new food plant was making less succulent growth than the rose they had been feeding upon.

July 26, both aphids were feeding head down and both producing young. Ten nymphs present and all were feeding.

August 2, both aphids were still feeding and producing young, 30 nymphs being present. Their manner was to colonize one leaf and then move to freshly growing uninfested leaf or to a separate plant. The apterous female was removed to avoid overstocking the caged ragwort.

August 9, several apterous viviparous females matured and were removed.

August 13, several more mature apterous viviparous females were removed.

September 12, the first alate viviparous female and several mature apterous ones were removed and, due to the condition of caged plant, the test was discontinued.

The point at issue, however, has been established. Captives of *Macrosiphum pseudorosae* were capable of living upon ragwort and their progeny matured upon the secondary host plant. There seems no reason to question the conclusion that the ragwort material first taken in July had had its origin in migrants from the rose as was the case with *Macrosiphum solan-*

ifolii. And, as with *Macrosiphum solanifolii,* the migration of *Macrosiphum pseudorosae* was not entirely complete for stragglers remained upon the rose during the summer with both these species.

All of the reared cage individuals were of the rose pink color variety as, it will be remembered, were the two females from which they were descended.

Plans were made for continuing observations earlier in the season during 1919 and a report upon this interesting aphid was delayed with that in mind. But, although the same locality was well patrolled this spring and summer not a single specimen of *Macrosiphum pseudorosae* was found. It seems better, therefore, to publish what has been ascertained with a view to throwing open the situation for comparison in other parts of the country.

It would not be surprising if the name *pseudorosae* should fall as a synonym to *rosaeiformis* Das, but material is not available for comparison and it is too far a cry from Maine to India to risk on the slight acquaintance we have either with the rose —ragwort species here or the "Punjab Rose Aphid" described by Das.

A full list of the food plants in India and America may give a clue leading both aphids to some older name. The same insect or one very closely allied is found in Maine upon *Geum* and Cinquefoil *(Potentilla)* of the rose family and upon certain other members of the Composite Family besides the golden ragwort, but in no case was it definitely ascertained whether it actually was *Macrosiphum pseudorosae* or a species closely resembling it and a further acquaintance with this aphid is desirable.

Macrosiphum pseudorosae is a variable species with reference to several characters which are usually available for specific determination, such as the relative length of the cornicle with reference to antennal segment III and the number of antennal sensoria. For instance the individuals reared on *Senecio* from two known females removed from rose showed the following variations. The size was in all the caged individuals, smaller than their rose progenitors a circumstance which might easily be accounted for by the fact that the basal rosettes of ragwort leaves were not making succulent growth. In the apterous viviparous females the relative length of cornicle to III of antenna,

about nine-tenths remained approximately constant in most cases though in one of the September individuals the cornicles were dwarfed to ten-seventeenths the length of III. In this same aphid there was but one sensorium on III as against 3 to 5 in most of the ragwort specimens and 6 to 8 in the summer host collections.

The key given on pages 216-218 has proved useful in separating *Macrosiphum pseudorosae* from other New England members of the same genus, and is offered here on the chance that it may be of some slight service in Eastern United States, though the writer has not yet been able to construct a key to these species which would seem to be at all adequate in view of the wide range of individual variation of which these aphids are capable.

Several New Species

The publication of the key necessitates the description of several species which have been accumulating in the collection until it is difficult to handle them any longer under manuscript names. Not enough is known about most of them to warrant giving them much space but it will serve to put them on record with reference to their food plants and possibly to link into data from other collections.

MACROSIPHUM CARPINICOLENS N. SP.

Apterous viviparous female: antennae, tibiae and distal two-thirds of cornicle dark; frontal tubercles very prominently produced; antennal segments, particularly III with curved imbrications closely set and with serrate edge which give a distinctive character at once noticeable; III with from one to a few sensoria in row near base, setae very short and stubby; III about two-fifths the length of hind tibia; relative lengths of antennal segments III to VI approximately indicated by 50, 45, 40, 10+65; cornicle shorter than V with the distal one-sixth reticulated; hind tarsus about three-fifths as long as base of VI.

This species collected from the leaves of blue beech—*(Carpinus caroliniana* Walt.) in the vicinity of Orono during June

and July, 1918, by Mr. George Blodget. The winged forms have not been found.

Type in collection of Maine Agricultural Experiment Station, No. 109-18.

MACROSIPHUM PTERICOLENS N. SP.

Alate viviparous female: general body color fern green, points dark; both margins of frontal tubercles produced; comparative length of antennal segments III to VI indicated by 16, 14, 12, 3+17; III with about 50 small, distinct circular sensoria reaching the entire length of segment, IV with no sensoria; cornicle usually shorter than IV and longer than V and with the distal area of reticulation not more than one-sixth its length; cauda about one-third as long as cornicle; wings with veins slender but clear cut and definite, second branch of M rather long.

This species was collected at Orono from fronds of bracken fern, *Pteris aquilina,* July 3, 1913 (79-13); and from lady fern, *Athyrium filix-foemina* (180-18).

Type in the collection of Maine Agricultural Experiment Station. No. 79-113.

MACROSIPHUM DIERVILLAE N. SP.

Apterous viviparous female: general color milk-white with water-white cornicles. Comparative length of antennal segments III to VI indicated by 60, 58, 52, 17, 90, III with one to few sensoria; hind tarsus less than one-half base of VI; cornicle slender with graceful constriction near tip, about the length of III and with about the distal one-ninth with faint though definite reticulations.

This species was collected at Orono from wild bush honeysuckle *(Diervilla lonicera* Mill.) by William C. Woods July 7 and July 21, 1915 (Nos. 65-15 and 84-15).

Type in collection of Maine Agricultural Experiment Station, No. 65-15.

MACROSIPHUM IMPATIENSICOLENS N. SP.

Alate viviparous female: general body color dark bronzy brown with black cornicles and whitish green or creamy cauda.

Species appearing rather hairy in life, with little dorsal tubercles at base of hairs on abdomen in transverse rows. Coxa, femora, and ventral surface of head olive green; tibia and tip of beak black. Comparative length of antennal segments III to VI indicated by 55, 46, 43, 10+65; III with 20 to 30 sensoria rather small and scattered, IV with no sensoria, frontal tubercles short on outer margin and a little rounded on inner margin; hind tarsus about nine-tenths as long as base of VI; vein A of fore wing conspicuously longer than cornicle; cornicle about as long as V with distal three-eighths strongly reticulated.

Apterous viviparous female: general body color and pilose tubercles as in alate female. Comparative length of antennal segments indicated by 48, 35, 34, 10+58; III with 10 to 15 sensoria on basal half of segment; cornicle about as long as V; cauda about five-sevenths the length of cornicle.

Nymphs are glistening and not pulverulent or hoary. They are hairy, reddish and dark brown.

This species is evidently distinct from *Macrosiphum carnosa* Buckton. It was collected at Orono from stem of terminal shoots of *Impatiens biflora*, August 25-27, 1915.

Type in collection of Maine Agricultural Experiment Station, No. 115-15.

MACROSIPHUM AMELANCHIERICOLENS N. SP.

Alate viviparous female: dark bodied with black antennae, legs and cornicles, and with dusky wings. Frontal tubercles strong and divergent. Comparative length of antennal segments III to VI indicated by 55, 45, 38, 10+45. III with about 50 sensoria scattered over nearly its whole length. IV with no sensoria. Cornicle shorter than III and longer than IV with more than one-fifth of its length reticulated at distal part. Cauda comparatively short and rugged.

The comparative length of antennal segments III to VI of the apterous female are indicated by 55, 40, 30, 10+30. III with about 40 sensoria.

This apparently distinctive aphid was collected in June at Orono 1914, from *Amelanchier spicata* Lam. I have never seen it since.

Type in the collection of the Maine Agricultural Experiment Station, No. 44-14.

MACROSIPHUM ONAGRAE N. SP.

Alate viviparous female: general body color stem green with abdomen immaculate, thorax olive brown, cauda green sometimes dusky at tip, cornicles black, veins in both wings slender and almost black. Frontal tubercles large and strongly divergent. Relative lengths of antennal segments III to VI indicated by 60, 45, 38, 10+70, III with about 20 sensoria in a somewhat irregular row, IV without sensoria. Anal vein of fore wing about the same length as antennal III. Cornicle about as long as IV and with its distal one-fourth or more reticulated. (153-12.)

Apterous viviparous female: general body color stem green and immaculate. Relative lengths of antennal segments III to VI indicated by 55, 40, 39, 10+60. III with 5 to 8 sensoria in row. Cornicle shorter than III but nearer III than IV. (66-10).

Apterous oviparous female: relative lengths of antennal segments III to VI indicated by 45, 35, 35, 10+65, III with 4 to 8 sensoria in an uneven row. Cornicle about as long as IV. Hind tibia, at widest part, double the width of the others and excessively crowded with sensoria (119-06).

This species comes near specimens of *Macrosiphum gaurae* Williams I have received from the west but is either distinct or the range of variability for the species is unusually great. It is the common *Macrosiphum* on evening primrose, *Oenothera biennis* L. in Maine and inhabits the stems of the flower cluster especially. This was taken first in 1905 and has been common ever since.

Type in the collection of the Maine Agricultural Experiment Station.

MACROSIPHUM PSEUDOCORYLI N. SP.

Alate viviparous female: general body color green with chestnut brown thorax and dusky antenna and cornicle. Frontal tubercles large. Comparative length of antennal segments III

to VI indicated by 55, 55, 53, 14+85, III with about 17 sensoria in an even row. Hind tibia less than one-half as long as base of VI. Cornicle much shorter than V and with distal one-fourth reticulated. Anal vein of fore wing not much, if any, longer than V and about half as long as the vein Cu. (104-18).

Apterous viviparous female: general body color green. Comparative length of antennal segments III to VI indicated by 65, 45, 45, 13+75, III with about three sensoria. Cornicle about as long as III and with distal one-tenth reticulated. (104-18).

This species was collected from ironwood *(Ostrya virginiana* (Mill)) at Orono, June 28, 1918 by Mr. George Blodget.

Type in collection of the Maine Agricultural Experiment Station, No. 104-18. Apparently the same species was collected from hazel bush *(Corylus rostrata* Ait.) May 29, 1918.

MACROSIPHUM PSEUDODIRHODUM N. SP.

Apterous viviparous female: general body color green or pale yellowish white. Frontal tubercles strong, the inner edge being almost as long as that of I. Relative lengths of antennal segments III to VI indicated by 60, 50, 45, 10+85, III with about 20 sensoria, a few more or less being common, the number being very variable. Cornicle about half the length of 30, slender, pale and distal tip for a short distance with indefinite curved imbrications with serrate edges.

This species does not seem to have been previously described for the rose. It is gregarious on terminal shoot, buds and tender leaves. Apterous females have been collected at Orono, April 12, 1910 on greenhouse roses and July 13, 1915 on wild rose on the bank of the Penobscot.

Type in collection of Maine Agricultural Experiment Station, No. 78-15.

MACROSIPHUM GRAVICORNIS N. SP.

Alate viviparous female: general body color varnished green with no conspicuous markings, antennae, legs and cornicles black, cauda pale green, head and thoracic lobes pale brown, wing veins dark but clear cut. Frontal tubercles

strongly produced on both sides. Relative length of antennal segments III to VI indicated by 70, 40, 40, 12+65, III with about 80 tuberculate sensoria. IV with no sensoria. IV to VI slender. Cornicle about one-fourth longer than IV, with about two-fifths its length with distal polygonal reticulations. Vein A of fore wing about the length of cornicle. Cu nearly twice as long.

Apterous viviparous female: general body color as with the alate female. Relative length of antennal segments III to VI indicated by 65, 40, 40, 12+60, III with about 40 tuberculate sensoria. IV with no sensoria. Cornicle about as in alate female.

Apterous oviparous female: relative length of antennal segments III to VI indicated by 57, 31, 31, 11+58, III with about 40 tuberculate sensoria. Hind tibia somewhat spindle shaped and set with sensoria.

This species was collected at Houlton, Maine on *Solidago* September 10, 1907 when alate and apterous viviparous females and apterous oviparous females were present. Both viviparous forms were collected, also on *Solidago*, at Orono, July 9, 1912.

Type in collection of Maine Agricultural Experiment Station.

MACROSIPHUM EUPATORICOLENS N. SP.

Alate viviparous female: general body color deep rose red not like the red of most species inhabiting the Compositae, more like the red of *rosae* but darker. Relative length of antennal segments III to VI indicated by 60, 53, 50, 11+65, III with about 20 to 30 sensoria circular but not at all uniform as to size. IV without sensoria. Cornicle as long as III, sometimes longer, with distal one-third reticulate.

Apterous viviparous female: general body color as in the alate female. Relative length of antennal segments III to VI indicated by 55, 46, 39, 11+55, III with 8 to 12 sensoria somewhat bunched on basal half.

This is a common species on Joe-Pye weed, *Eupatorium purpureum* L. Type (230-18) collected July 27, 1918 by Mr. George Blodget at Orono.

"Intermediates" are frequent in the collections of this aphid, which except for their wing stubs partake chiefly of the characters of the alate female.

MACROSIPHUM LANCEOLATUM N. SP.

Alate viviparous female: general body color dark reddish brown, cauda yellowish white, cornicle black. Frontal tubercles strong. Comparative length of antennal segments III to VI indicated by 45, 38, 35, 10-55. III with about 30 sensoria scattered along whole length. IV with no sensoria. Cornicle about as long as IV and shorter than beak. III is shorter than vein A of front wing. Reticulation of cornicle covering about distal two-sevenths.

Apterous viviparous female: general color as in the alate form. III with about 20 sensoria. Hairs of the head spatulate at tip. Cornicle shorter than beak.

This aphid is sometimes taken on goldenrod, *Solidago lanceolata* L. The antennae seem particularly brittle and are frequently knocked off at distal tip of III. The wings are often sport-veined, M frequently being but once branched although when branched twice the second branch is not especially near wing margin. Mr. Pergande saw Maine material of this species about fourteen years ago and stated that it was unnamed. The writer has not succeeded in linking it with known species and so describes it as new.

The paratype material (43-05 and 86-09) is in the collection of the Maine Agricultural Experiment Station.

KEY TO EASTERN SPECIES OF MACROSIPHUM.*

1. Species developing on Compositae either exclusively or for a part of the life cycle.....29
   Species not developing exclusively on Compositae 2
2. Apex of cornicle with distinct reticulated area (e. g. *solanifolii)*.....3
   Apex of cornicle inbricated (e. g. *pisi)* or indifferently characterized (e. g. *pelargonii)*.....22
3. Apterous female with III closely imbricated throughout. Setae of III very short and stubby .....carpinicolens
   Apterous female not exceptional in foregoing respect 4
   Species known only for Orchidaceae.....luteum
4. Apterous female with base of VI nearer 3 times length of II than 2½ times length of II and base of VI more than 2 times length of hind tarsus.....5
   Apterous female with base of VI nearer 2½ times length of II than 3 times length of II (or if not then base of VI not more than 2 times length of hind tarsus).....6
5. Cornicle with distal half having strong imbrications extending to area of reticulation.....ptericolens
   Cornicle without strong imbrications leading to area of reticulations.....diervillae
6. III with numerous sensoria not in a row.....7
   III with sensoria confined approximately to single row.....10
7. III of apterous female with sensoria not much exceeding basal half.....8
   III of apterous female with sensoria extending over at least ⅔ length.....9
8. Cornicle with distal area of reticulation approximately ⅙ its length.....rosae
   Cornicle with distal area of reticulation exceeding ¼ its length.....impatiensicolens
9. Cornicle with area of reticulation less than ⅛ its length.....albifrons
   Cornicle with area of reticulation more than ⅕ its length.....amelanchiericolens
10. Fore wing with Cu and A heavily shaded.....11
    Fore wing with Cu and A not heavily shaded, though sometimes darker than other veins....12

*Tarsal measurements in this key include only second joint of tarsus exclusive of claw. Unless otherwise stated the alate form is indicated.

11. Vein A of fore wing conspicuously longer than cornicle ..... venaefuscae Davis
    Vein A of fore wing shorter than cornicle..... coryli
12. Developing on Magnoliaceae..... 13
    Not developing on Magnoliaceae..... 14
13. Base of VI about 5 times length of tip* of V... liriodendri
14. Cornicle with nearer ⅓ than ¼ its length reticulated ..... granarium
    Cornicle with nearer ¼ than ⅓ its length reticulated 15
15. Cornicle with hardly more than 1/7 its length reticulated 16
    Cornicle with at least ⅙ its length reticulated 17
16. Cornicle conspicuously longer than vein A of fore wing..... californicum
    Cornicle conspicuously shorter than A..... gaurae
17. Cornicle distinctly shorter than either vein A of fore wing or antennal III..... onagrae
    Cornicle not much shorter than either A or III.. 18
18. Second joint of 1st tarsus less than ½ base of VI..... 19
    Second joint of 1st tarsus more than ½ base of VI..... 20
19. III with approximately distal ⅙ clear of sensoria ..... pseudocoryli
    III with approximately distal ½ clear of sensoria lilii
20. Cornicle deep black..... pseudorosae
    Cornicle pale to dusky..... 21
21. All tibiae with base about setae paler giving a mottled appearance..... asclepiadis
    All tibiae with base about setae concolorous with adjacent area..... solanifolii
22. Developing on rose..... 23
    Not developing on rose..... 24
23. III of apterous female with 1 to few sensoria.... dirhodum
    III of apterous female with 17 to 25 sensoria in a somewhat uneven row..... pseudodirhodum
24. III with sensoria in fairly regular single row.... 27
    III with sensoria not confined to single row..... 25
25. IV of alate female with sensoria (8 more or less) 26
    IV of alate female typically without sensoria (sometimes 1 to 3 present)..... crataegi
26. Wing veins all heavy..... purpurascens
    Wing veins not heavy..... kaltenbachii

*Distal part including sensorium.

27. Filament of VI approximately ½ length of A of fore wing.....illinoiensis
Filament of VI nearly as long as or longer than A of fore wing.....28
28. Base of VI approximately 3 times as long as II..pisi
Base of VI not more than 2½ times II.....pelargonii
29. Apex of cornicle with definite reticulated area (distinctly more than 3 rows of reticulations) (e. g. *solanifolii*).....30
Apex of cornicle with about 3 rows of sub-reticulated striations.....hieracii kaltenbachii
30. Reticulated area of cornicle extending two-thirds its length; cornicle hardly longer than cauda (sometimes shorter).....sanborni
Reticulated area of cornicle hardly exceeding, if reaching, one-half its length.....31
31. Antennal III with sensoria in single row.....32
Antennal III with sensoria too numerous for single row.....33
32. Cornicle deep black.....pseudorosae
Cornicle pale to dusky.....solanifolii
33. Caudal projection sub-equal to cauda in length giving "two tailed" appearance.....cnici (Schrank)
No unusual caudal projection.....34
34. Antennal III nearly as long as IV+V and with about 70 tuberculate sensoria.....gravicornis
Antennal III not unusual in foregoing particulars.....35
35. Cornicle considerably shorter than III.....37
Cornicle nearly as long as or longer than III....36
36. III with approximately 45 sensoria.....eupatoricolens
III with approximately 30 sensoria.....erigeronensis
37. Cornicle at least ⅚ as long as A.....38
Cornicle approximately ¾ as long as A or shorter.....39
38. Reticulated area of cornicle ⅓ its length or more.....luteola
Reticulated area of cornicle less than ¼ its length.....rudbeckiae
39. Cornicle not more than ½ as long as III.....tanaceti
Cornicle distinctly longer than ½ of III.....40
40. Hind tibia approximately 2 times length of A of fore wing.....taraxaci
Hind tibia approximately 2½ times length of A of fore wing.....ambrosiae

FOOD PLANT CATALOG OF THE APHIDIDAE OF THE WORLD

PART VI.*

EDITH M. PATCH.

CORNACEAE. DOGWOOD FAMILY.

CORNUS. Cornel.

C. amomum Mill. (sericea) Silky Cornel. Kinnikinnik.
Anoecia corni Fabr. Wilson, 1918, p. 224.
Aphis cornifoliae Fitch. Weed, 1888, p. 124.
Schizoneura cornicola (Walsh). Weed, 1888, p. 129.

C. asperifolia Michx.
Anoecia corni Fabr. Wilson, 1918, p. 224.
Schizoneura corni Fab. Sanborn, 1904, p. 28.

C. controversa.
Siphocoryne cornicolum Matsumura. Matsumura, 1918a, p. 6.

C. florida L. Flowering Dogwood.
Aphis cornifoliae Fitch. Monell, 1879, p. 25.

C. Mas L.
Aphis gossypii Glover (citrifolii Ashmead. In part) (citrulli Ashmead) (cucumeris Forbes) (forbesi Weed?). Pergande, 1895, p. 314.

C. paniculata L. Her. (candidissima Marsh).
Anoecia corni Fabr. Wilson, 1918, p. 224.
Aphis cornifoliae Fitch. Thomas, 1879, p. 101.
Aphis maculata Oestlund. Williams, 1891, p. 10.
Schizoneura corni Fab. Williams, 1891, p. 10.

C. sanguinea L.
Anoecia corni Fab. (Schizoneura vagans Koch) (venusta Pass.). van der Goot, 1915a, p. 510.
Aphis cornifoliae Fitch. Weed, 1888, p. 124.
Schizoneura corni Fab. (S. graminis Del Guercio) Del Guercio, 1900, p. 103.
Schizoneura corni (Fab.) Kalt. (S. vagans Koch) (Anoecia corni Koch) Buckton, 3, p. 107.
Schizoneura corni Hartig. Wilson, 1918, p. 224.
Schizoneura cornicola (Walsh). Weed, 1888, p. 129.

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*Papers from the Maine Agricultural Experiment Station: Entomology No. 103. For Parts I-V see Bulletins 202, 213, 220, 225 and 270.

Schizoneura kochii Lichtenstein. Wilson, 1918, p. 224.
Vacuna dryophila Schrank. Kaltenbach, 1874, p. 296.

C. (Svida) stolonifera Michx. Red Osier Dogwood.
Anoecia corni Fabr. Wilson, 1918, p. 224.
Anoecia cornicola Walsh. Wilson, 1918, p. 224.
Aphis cornifoliae Fitch. Weed, 1893, p. 299.
Eriosoma? cornicola Walsh. Walsh, 1862, p. 304.

C. stricta Lam. Stiff Cornel.
Aphis (Adactynus) cornus-stricta Rafinesque. Rafinesque, 1818.

C. sp.
Anoecia corni Fab. (Schizoneura venusta Pass.) Tullgren, 1909, p. 187.
Anoecia corni Fab. (S. cerealium Szaniszlo) (S. fulviabdominalis Sasaki) (S. nigriabdominalis Sasaki). Matsumura, 1917b, p. 45.
Anoecia querci (Fitch). (Eriosoma querci Fitch) (Rhizobius eleusinis Thos.) (Schizoneura panicola Thos.) (Anoecia corni American authors) (Anoecia oenotherae Wilson). Baker, 1916, p. 363.
Aphis cornifila Del Guercio (cornifoliae Fitch?). Del Guercio, 1909 (1910), p. 297. Redia VII.
Aphis helianthi Monell. Wilson, 1918, p. 224.
Aphis maculatae Oestlund. Oestlund, 1887, p. 61.
Schizoneura corni (Fab.) (venusta Pass.) (fungicola Walsh) (cornicola Walsh) (panicula Thomas). Osborn, 1890, Bur. Ent. Bul. 22, O. S. p. 33.
Schizoneura kochii Lichtenstein. Lichtenstein, La Flore.

NYSSA. Tupelo.

N. multiflora. (Nyssa sylvatica).
Phylloxera nyssae Pergande. Pergande, 1904b, p. 270.

N. sylvatica. (Nyssa multiflora).
Phylloxera nyssae Pergande. Wilson, 1918, p. 277.

ERICACEAE. HEATH FAMILY.

ARBUTUS.

A. Menziesii Pursh. Madrone.
Rhopalosiphum arbuti Davidson. Davidson, 1910, p. 379.

A. Unedo L. Strawberry Tree.
Aphis arbuti Ferrari. Zoological Record, 1872, p. 417.
Rhopalosiphum nervatum Gillette. (arbuti Davidson) Essig, 1917a, p. 330.

ARTOSTAPHYLOS. Bearberry.

A. glauca.
Phyllaphis coweni (Cockerell) (Cryptosiphum tahoense Davidson). Essig, 1915b, p. 195.

A. manzanita.
Phyllaphis coweni (Cockerell) (Cryptosiphum tahoense Davidson) Essig, 1915b, p. 195.
Rhopalosiphum nervatum Gillette. (arbuti Davidson) Essig, 1917a, p. 330.

A. pumila Nutt.
Cryptosiphum tahoense Davidson. Wilson, 1918, p. 194.
Phyllaphis coweni Gillette (Cryptosiphum tahoense Davidson). Davidson, 1911b, p. 560; 1912, p. 404.

A. tomentosa Lindl.
Cryptosiphum tahoense Davidson. Wilson, 1918, p. 194.
Phyllaphis coweni Gillette. (Cryptosiphum tahoense Davidson) Davidson, 1911b, p. 560; 1912, p. 404.

A. Uva-ursi L.
Nectarophora sp. Cowen. Cowen, 1895, p. 124.
Phyllaphis (Pemphigus) coweni Cockerell. Gillette, 1909b, p. 41.

CALLUNA.

C. vulgaris. Heather.
Aphis callunae Theobald. Theobald, 1915b.

ERICA.

E. gracilis.
Aphis rumicis Linn. Wilson, 1918, p. 238.

E. sp.
Aphis ericae Walker.. Theobald, 1915b.

RHODODENDRON.

R. californicum Hook.
Macrosiphum rhododendri Wilson. Wilson, 1918a, p. 230.

VACCINIUM.

V. varingiaefolium Miq.
Toxoptera aurantii Boyer. (camelliae Kalt.) (aurantiae Koch) (coffeae Nietner) (Ceylonia theaecola Buckton) (theobromae Schout.) van der Goot, 1916b, p. 76, note p. 295.

PLUMBAGINACEAE. LEADWORT FAMILY.

STATICE.

S. Limonium L.
Aphis limonii Walker. Walker, 1848c, p. 2248.

PRIMULACEAE. PRIMROSE FAMILY.

ANAGALLIS. Pimpernel.

A. arvensis L. Common Pimpernel.
Aphis chloris Koch. Passerini, 1874, pp. 137, 138.
Aphis nerii Kalt. Macchiati, 1883, p. 255.
Aphis nigro-rufa Walker. (Macrosiphum?) Walker, 1848c, p. 2247; Theobald, 1913, p. 154.
Aphis persola Walker. Walker, 1848c, p. 2246.
Aphis rumicis Linn. Walker, 1850a, p. 19.

ANAGALLIS.

A. linifolia L. (collina).
Aphis nerii Kalt. Passerini, 1863, p. 45.
A. tenella L.
Aphis nerii Kalt. Macchiati, 1883, p. 255.

CYCLAMEN.

C. sp.
Macrosiphum circumflexa Buckton. Wilson, 1918, p. 228.
Myzus circumflexum (Buckton) Davis. (vincae Gillette). Davis, 1914, p. 121. Canad. Ent. Vol. 46.
Siphonophora circumflexa Buckton. Buckton, 1, p. 131.

LYSIMACHIA. (Lubinia) Loosestrife.

L. mauritiana Lam. (Lubinia mauritiana).
Aphis nerii Kalt. Passerini, 1863, p. 45.
L. sp.
Aphis rumicis L. (evonymi Fab.) (papaveris Fab.) (atriplicis Fab.) (genistae Scopoli). van der Goot, 1915, p. 225.
Pemphigus bursarius Linn. Wilson, 1918, p. 269.
Pemphigus lactucarius Pass. Lichtenstein, Flore Supplement.

PRIMULA. Primrose. Cowslip.

P. cortusoides.
Macrosiphum primulana Matsumura. Matsumura, 1917a, p. 361.
P. Forbesi Franch.
Myzus persicae Sulzer. Gillette and Taylor, 1908, p. 35.
P. kewensis.
Macrosiphum primulae Theobald. Theobald, 1913, Jour. Ec. Biol. Vol. 8, p. 54.
P. veris.
Aphis (Adactynus) furcipes Rafinesque. Rafinesque, 1817.
P. vulgaris.
Macrosiphum primulae Theobald. Theobald, 1913, Jour. Ec. Biol. Vol. 8, p. 54.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 303.
P. sp.
Amphorophora latysiphon Davidson. Essig, 1917a, p. 329.
Siphonophora malvae (Mosley) Pass. (A. pelargonii Kalt.) (A. pallida Walker) (S. pelargonii Koch) (S. diplantherae Koch). Passerini, 1863, p. 14.

STEIRONEMA.

S. ciliatum.
Aphis rumicis Linn. Wilson, 1918, p. 339.
S. heterophyllum.
Macrosiphum circumflexa Buckton. Wlison, 1918, p. 339.
S. lanceolatum.
Myzus circumflexum (Buckton) (vincae Gillette). Davis, 1914, p. 122, Canad. Ent.

EBENACEAE. EBONY FAMILY.

DIOSPYROS. Persimmon.

D. virginiana L. Common Persimmon.
Aphis diospyri Thomas. Thomas, 1879, p. 96.
Macrosiphum circumflexum Buckton. Theobald, 1913, p. 54.

STYRACACEAE. STORAX FAMILY.

STYRAX.

S. Benzoin Dryand.
Astegopteryx styracophila Karsch. Tschirch, 1890, p. 52.
S. japonicum Sieb. and Zucc.
Astegopteryx nekoashii Sasaki. Zoological Record, 1907, p. 398.

SYMPLOCOS.

S. subsessilis Choisy. (sessilifolia).
Aulacorthum symplocois van der Goot. van der Goot, 1916b, p. 28.
Toxoptera aurantii Boyer. (camelliae Kalt.) (aurantiae Koch) (coffeae Nietner) (Ceylonia theaecola Buckt.) (theobromae Schout.). van der Goot, 1916b, p. 76, note p. 295.

OLEACEAE. OLIVE FAMILY.

FORSYTHIA.

F. viridissima Lindl.
Nectarophora tabaci Pergande. Pergande, 1898, p. 300.
Prociphilus venafuscus Patch. Patch, 1913, Bul. 207, p. 448.

FRAXINUS. Ash.

F. americanus L. White Ash.
Aphis coryli Goetz. Kaltenbach, 1874, p. 432.
Pemphigus bumeliae (Schrank). Kaltenbach, 1843, p. 184.
Pemphigus fraxinifolii Riley. Jackson, 1908, p. 212.
Phylloxera? fraxini Stebbins. Stebbins, 1910, p. 46.
Prociphilus approximatus Patch. Patch, 1917a, p. 418.
Prociphilus fraxini Linn. Wilson, 1918, p. 244.

F. bungeana.
Prociphilus bumeliae Schrank. Matsumura, 1917b, p. 88.

F. dipetala H. and A.
Pemphigus fraxini-dipetalae Essig. Essig, 1911b, p. 555.

F. excelsior L.
Aphis fraxini Fabr. Wilson, 1918, p. 244.
Aphis fraxini Geoffrey. Kaltenbach, 1843, p. 140.
Callipterus coryli (Goetz) Koch. Buckton, 3, p. 18.
Prociphilus bumeliae (Schrank) Koch. (A. fraxini Fab.?) (E. bumelina Heyden). Koch, p. 282. bumelina is misprint for bumeliae. See Heyden, 1837, p. 295.
Prociphilus bumeliae Schrank. (Holzneria poschingeri Licht.) van der Goot, 1915a, p. 449.
Prociphilus fraxini Linn. Wilson, 1918, p. 244.
Prociphilus nidificus (Fr. Low). Bayer, 1914a, p. 153.

F. longicuspis.
Siphocoryne fraxinicola Matsumura. Matsumura, 1917a, p. 359.

F. nigra Marsh. (sambucifoli). Black Ash.
Pemphigus fraxinifolii Riley. Jackson, 1908, p. 211.
Prociphilus fraxinifolii Thomas. Wilson, 1918, p. 244.

F. oregona Nutt.
Pemphigus californicus Davidson. Davidson, 1914, Jour. Ec. Ent. Vol. 7, p. 127.

Pemphigus fraxinifolii Riley. Gillette, 1909a, p. 364.
Prociphilus fraxini Linn. Wilson, 1918, p. 245.
Prociphilus fraxinidipetalae Essig. Wilson, 1915b, p. 85.
Prociphilus fraxinifolii Thomas. Wilson, 1918, p. 245.

F. ornus L. (Ornus europaea Pers.)
Prociphilus nidificus (Fr. Low). Bayer, 1914a, p. 154.

F. pennsylvanica Marsh. Red Ash.
Pemphigus venafuscus Patch. Patch, 1909a, p. 319.

F. quadrangulata Michx. Blue Ash.
Pemphigus fraxinifolii Riley. Hunter, 1901, p. 77.
Prociphilus fraxini Linn. Wilson, 1918, p. 245.
Prociphilus fraxinifolii Thomas. Wilson, 1918, p. 245.

F. sambucifolia Lam.
Pemphigus fraxinifolii Riley. Hunter, 1901, p. 78.
Prociphilus fraxinifolii Thomas. Wilson, 1918, p. 245.

F. sp.
Eriosoma bumeliae Heyden. (Aphis bumeliae Schrank) (Chermes lapidarius Fab.) (Lachnus lapidarius Burm.) Heyden, 1837, p. 295.
Pemphigus fraxini Hartig. Wilson, 1918, p. 244.
Prociphilus bumeliae Schrank. Tullgren, 1909, p. 81.
Prociphilus bumeliae Schrank. (poschingeri Holzner in part). Nusslin, 1910a, p. 293.
Prociphilus fraxini Fab. Lichtenstein, La Flore.
Prociphilus nidificus Low. Tullgren, 1909, p. 81.
Prociphilus nidificus Low. (poschingeri Holzner in part). Nusslin, 1910a, p. 293.
Thecabius californicus Davidson. Swain, 1919a, p. 166.

JASMINUM. Jasmine.

J. officinale.
Aphis rumicis Linn. Wilson, 1918, p. 258.

J. sp.
Aphis malvae Koch. Das, 1918a, p. 271.
Macrosiphum jasmini Clarke. Wilson, 1918, p. 258. "Jasmine."
Nectarophora jasmini Clarke. Clarke, 1903, p. 253.

LIGUSTRUM. Privet.

L. ibota Sieb.
Macrosiphum ibotum Essig and Kuwana. Essig and Kuwana, 1918a, p. 40.

L. vulgare L. Privet or Prim.
Asiphum ligustrinellum Koch. Koch, p. 247.
Rhopalosiphum ligustri (Kalt.) Pass. Buckton, 2, p. 14. Bayer, 1914a, p. 152.
Rhopalosiphum ligustri. Ross, 46th Rept. Ent. Soc. Ont., p. 23.

L. sp.
Aphis ligustri Mosley. Wilson, 1918, p. 265.
Aphis ligustriella Theobald. Wilson, 1918, p. 265.

OLEA.

O. europea.
Eriosoma oleae Leach. Wilson, 1918, p. 277.

OSMANTHUS.

O. aquifolium Sieb.
Prociphilus osmanthae Essig and Kuwana. Essig and Kuwana, 1918a, p. 40.

SYRINGA. Lilac.

S. amurense.
Prociphilus bumeliae Schrank. Matsumura, 1917b, p. 88.
S. amurensis Rupr.
Macrosiphum syringae Matsumura. Matsumura, 1918a, p. 4.
S. vulgaris L. Common Lilac
Myzus persicae Sulzer. Gillette and Taylor, 1908, p. 36.
Prociphilus (Pemphigus) venafuscus Patch. Patch, 1909a, p. 319.
Prociphilus fraxini Linn. Wilson, 1918, p. 341.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 341.
S. sp.
Aphis medicaginis Koch. Swain, 1919a, p. 175.
Macrosiphum malvicola Matsumura. Matsumura, 1917a, p. 359.

LOGANIACEAE. LOGANIA FAMILY.

BUDDLEIA.

B. madagascariensis Lam.
Aphis buddleiae Theobald. Theobald, 1918a, p. 281.

GENTIANACEAE. GENTIAN FAMILY.

FRASERA. American Columbine.

F. speciosa Dougl.
Nectarophora martini Cockerell. Cockerell, 1903a, p. 170.

GENTIANA.

G. cruciata.
Aphis epilobii Kalt. Wilson, 1918, p. 247.

LIMNANTHEMUM. Floating Heart.

L. nymphoides Hoffingg.
Rhopalosiphum nymphaeae (L.) Koch. (A. butomi Schrank) (R. najadum Koch). Passerini, 1863, p. 21.

MENYANTHES. Buckbean.

M. trifoliata L.
Rhopalosiphum nymphaeae (L.) Koch. (A. butomi Schrank) (R. najadum Koch). Passerini, 1863, p. 21.
Siphocoryne nymphaeae Linn. (aquaticum F.) (alismae Koch) (najadum Koch) (butomi Schrank) (aquaticus Jackson). Theobald, 1915c, p. 118.

NYMPHOIDES.

N. peltatum.
Siphocoryne nymphaeae Linn. Wilson, 1918, p. 277.

VILLARSIA.

V. sp.
Aphis pallida Walker. Walker, 1848b, p. 430.
Macrosiphum pallida Walker. Wilson, 1918, p. 353.

APOCYNACEAE. DOGBANE FAMILY.

APOCYNUM. Dogbane.

A. androsaemifolium L. Spreading Dogbane.
Aphis apocyni Koch. Koch, p. 98.
A. cannabinum L. Indian Hemp.
Aphis apocyni Koch. Thomas, 1879, p. 94.
Aphis asclepiadis Fitch. Williams, 1891, p. 10.
Aphis lutescens Monell. Williams, 1891, p. 10.
A. sp.
Aphis asclepiadis Fitch. Oestlund, 1887, p. 60.
Toxoptera aurantii Boyer. (camelliae Kalt.) (coffeae Nietner) (Ceylonia theaecola Buckt.) (Toxoptera theobromae Schout.) van der Goot, 1916b, p. 76.

NERIUM.

N. oleander L. Oleander.
Aphis asclepiadis Fitch. Wilson, 1918, p. 276.
Aphis lutescens Monell. Wilson, 1918, p. 276.
Aphis nerii Kalt. Kaltenbach, 1843, p. 119.

Aphis nerii Boyer (asclepiadis Fitch). Sanborn, 1904, p. 52.
Aphis nerii Fonsc. Essig, 1917a, p. 340.
Aphis papaveris Fab. Kaltenbach, 1874, p. 269.
Aphis rumicis Linn. Walker, 1850a, p. 19.
Aphis silybi Passerini. Del Guercio, 1909 (1910), Redia VII, p. 297.
Cryptosiphum nerii Perez. Wilson, 1918, p. 276.
Myzus asclepiadis Pass. Ferrari, 1872, p. 62.
Myzus nerii Boyer. Wilson, 1918, p. 276.
Rhopalosiphum dianthi (Schrank) Koch (persicae, Puceron du pecher Morren) (rapae Curtis) (floris rapae Curtis) (dubia Curtis) (vastator Smee) (persicaecola Boisduval). Buckton, 2, p. 17.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 276.

N. sp.

Aphis lutescens Monell. Lichtenstein, La Flore.
Cryptosiphum nerii Stefani. Schouteden, 1906c.
Rhopalosiphum persicae Sulzer. Lichtenstein, Flore Supplement.

VINCA. Periwinkle.

V. major L.

Amphorophora latysiphon Davidson. Davidson, 1912, p. 409.
Macrosiphum convolvuli Kalt. Wilson, 1918, p. 353.
Macrosiphum vincae Walker. Wilson, 1918, p. 353.
Myzus vincae Gillette. Davidson, 1910, p. 380.
Siphonophora convolvuli Kalt. (A. vincae Walker). Buckton, 1, p. 149.

V. minor L. Common Periwinkle. "Myrtle."

Aphis vincae Walker. Kaltenbach, 1874, p. 438.
Macrosiphum convolvuli Kalt. Theobald, 1913, p. 55.
Macrosiphum vincae Walker. Wilson, 1918, p. 353.

V. sp.

Macrosiphum circumflexa Buckton. Wilson, 1918, p. 353.
Myzus circumflexus Buckton. Swain, 1919a, p. 176.
Myzus persicae Sulzer. Gillette and Taylor, 1908, p. 36.
Myzus vincae Gillette. Gillette, 1908b, p. 19.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 353.

ASCLEPIADACEAE. MILKWEED FAMILY.

ACERATES. Green Milkweed.

A. angustifolia Nutt. See Asclepias stenophylla Gray.

A. floridana (Lam.) Hitche. (longifolia).

Aphis asclepiadis Fitch. Williams, 1891, p. 17.

ASCLEPIAS. Milkweed.

A. amplexicaulis Sm. (obtusifolia).
Callipterus asclepiadis Monell. Hunter, 1901, p. 89.

A. curassavica L.
Aphis nerii Boyer. (Myzus asclepiadis Pass.) (Aphis gomphorocarpi van der Goot). van der Goot, 1916b, p. 101.
Myzus asclepiadis Pass. Passerini, 1863, p. 25.

A. grandiflora.
Myzus asclepiadis Pass. Ferrari, 1872, p. 62.

A. incarnata L. Swamp Milkweed.
Aphis lutescens Monell. Williams, 1891, p. 17.

A. lunata.
Myzus asclepiadis Pass. (Aphis nigripes Theobald). Theobald, 1915c, p. 129.

A. mexicana Cav.
Aphis lutescens Monell. Davidson, 1910, p. 377.

A. obtusifolia.
Myzocallis asclepiadis Monell. Wilson, 1918, p. 198.

A. speciosa Torr.
Aphis asclepiadis Fitch. Wilson, 1918, p. 198.
Aphis gossypii Glover. Essig, 1917a, p. 338.
Aphis nerii Fonsc. (A. lutescens Monell). Essig, 1917a, p. 341.
Nectarophora asclepiadis Cowen. Cowen, 1895, p. 123.

A. stenophylla Gray. (Acerates angustifolia Nutt.)
Aphis asclepiadis Fitch. Hunter, 1901, p. 120.

A. syriaca L. (A. cornuti). Common Milkweed or Silkweed.
Aphis asclepiadis Fitch. Oestlund, 1887, p. 60.
Aphis lutescens Monell. Monell, 1879, p. 23.
Callipterus asclepiadis Monell. Oestlund, 1887, p. 42.
Macrosiphum asclepiadifolii Thomas. Wilson, 1918, p. 198.
Myzocallis asclepiadis Monell. Wilson, 1918, p. 198.
Myzus asclepiadis Pass. Passerini, 1863, p. 25.
Myzus nerii Boyer. Wilson, 1918, p. 198.
Nectarophora asclepiadis Fitch. Hunter, 1901, pp. 93, 112, 121.
Siphonophora asclepiadifolii Thomas. (asclepiadis? Fitch). Thomas, 1879, p. 58.

A. tridentata.
Macrosiphum asclepiadis Cowen. Wilson, 1918, p. 198.

A. tuberosa L. Butterfly Weed. Pleurisy-root.
Myzus asclepiadis Pass. Ferrari, 1872, p. 62.

A. vestita H. and A. Woolly Milkweed.
Aphis gossypii Glover. Essig, 1917a, p. 339.
Aphis nerii Fonsc. (lutescens). Essig, 1917a, p. 341.

A. sp.
Aphis asclepiadis Fitch. Gillette, 1910, p. 404.
Aphis nerii Boyer (asclepiadis Fitch). Sanborn, 1904, p. 52.

Callipterus asclepiadis Monell. Sanborn, 1904, p. 39.
Macrosiphum solanifolii (Ashmead). Britton and Lowry, 1918, (17th Rept.) p. 292.
Myzocallis asclepiadis (Monell). Gillette, 1910, p. 368.
Rhopalosiphum lactucae (Kalt.). Swain, 1919a, p. 160.

CALOTROPIS.

C. gigantea Dryand.
Aphis nerii Boyer (nerii Licht.) (gomphorocarpi van der Goot). van der Goot, 1916b, p. 101.
Aphis nerii Boyer. Das, 1918a, p. 269.

C. procera.
Aphis calotropidis Del Guercio. Wilson, 1918, p. 208.
Aphis nerii Boyer. Das, 1918a, p. 269.
Aphis paoli Del Guercio. Wilson, 1918, p. 208.

CRYPTOSTEGIA.

C. grandiflora.
Aphis malvi Koch. Das, 1918a, p. 270.
Aphis nerii Boyer. Das, 1918a, p. 270.

CYNANCHUM.

C. dalhousie.
Aphis nerii Boyer. Das, 1918a, p. 205.

DRAGEA.

D. volubilis.
Aphis nerii Boyer. Das, 1918a, p. 205.

GOMPHOCARPUS.

G. fruticosus.
Aphis gomphorocarpi van der Goot. van der Goot, 1912, p. 276.
Myzus asclepiadis Pass. (Aphis nigripes Theobald). Theobald, 1915c, p. 129.

G. fructicosus. (Gomphorocarpus fructicosus?).
Aphis gomphorocarpi van der Goot. Wilson, 1918, p. 249.

HOYA.

H. longifolia.
Aphis nerii Boyer. Das, 1918a, p. 205.

H. volubillis.
Aphis nerii Boyer. Das, 1918a, p. 271.

PERGULARIA.

P. extensa.
Aphis foveolata Del Guercio. Wilson, 1918, p. 283.

PERIPLOCA.

P. graeca L.
Aphis nasturtii Kaltenbach. Del Guercio, 1909 (1910), Redia, VII, p. 297.

CONVOLVULACEAE. CONVOLVULUS FAMILY.

CALYSTEGIA.

C. sepium R. Br. Hedge Bindweed.
Siphonophora vincae Walker. Passerini, Flora.
C. Soldanella R. Br. Prod. (Convolvulus Soldanella).
Aphis derelicta Walker. Walker, 1849c, p. 50.
C. sp.
Macrosiphum vincae Walker. Wilson, 1918, p. 208.

CONVOLVULUS. Bindweed.

C. Althaeoides L.
Aphis convolvulicola Ferrari. Macchiati, 1883, p. 239.
Siphonophora solani Kalt. Macchiati, 1883, p. 231.
C. arvensis L.
Amphorophora latysiphon Davidson. Davidson, 1912, p. 409.
Aphis convolvulicola Ferrari. Ferrari, 1872, p. 67.
Macrosiphum convolvuli Kalt. Wilson, 1918, p. 223.
Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 50.
C. major.
Myzus persicae (Sulzer). Das, 1918a, p. 269.
Siphonophora convolvuli Kalt. (A. vincae Walker). Buckton, 1, p. 149.
C. minor.
Siphonophora convolvuli Kalt. (A. vincae Walker). Buckton, 1, p. 149.
C. sepium.
Aphis convolvuli Kalt. Kaltenbach, 1874, p. 443.
Macrosiphum convolvuli Kalt. Wilson, 1918, p. 223.
C. tricolor.
Macrosiphum convolvuli Kalt. Wilson, 1918, p. 223.
C. sp.
Aphis gossypii Glover. (citrifolii Ashmead, in part) (citrulli Ashmead) (cucumeris Forbes) (forbesi Weed?). Pergande, 1895, p. 314.

Macrosiphum ludovicianae Oestlund. Swain, 1919a, p. 164.
Myzus persicae Sulzer. Gillette and Taylor, 1908, p. 36.

IPOMOEA.

I. Batatas Lam.
Macrosiphum solanifolii (Ashmead). Houser, 1917a, p. 69.

I. crispa.
Myzus persicae (Sulzer). Das, 1918a, p. 168.

I. guttata.
Aphis malvae Koch or *A. malvoides* Das. Das, 1918a, p. 271.
Myzus persicae (Sulzer). Das, 1918a, p. 168.

I. hederacea Jacq.
Rhopalosiphum magnoliae Essig and Kuwana. Essig and Kuwana, 1918a, p. 39.

I. mexicana.
Aphis malvae Koch or *A. malvoides* Das. Das, 1918a, p. 271.
Myzus persicae (Sulzer). Das, 1918a, p. 168.

I. palmata.
Aphis malvae Koch or *A. malvoides* Das. Das, 1918a, p. 271.

I. purpurea.
Macrosiphum convolvuli Kalt. Wilson, 1918, p. 257.
Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 50.

I. sp.
Aphis gossypii Glover (malvae Koch) (cucurbiti Buckt.) (citrifolii Ashm.) (citrulli Ashm.) (cucumeris Forbes). van der Goot, 1916b, p. 93.
Aphis minuta Wilson. Wilson, 1918, p. 257. On "Aero Potato."
Rhopalosiphum persicae Sulzer. Matsumura, 1917a, p. 362.

HYDROPHYLLACEAE. WATERLEAF FAMILY.

NEMOPHILA.

N. sp.
Siphonophora convolvuli Kalt. (A. vincae Walker). Buckton, 1, p. 149.

BORAGINACEAE. BORAGE FAMILY.

AMSINCKIA.

A. intermedia Fisch. Buckthorn weed.
Aphis senecio Swain. Swain, 1918a, p. 17.

A. spectabilis Fand. M.
Aphis senecio Swain. Swain, 1918a, p. 17.
Myzus persicae Sulzer. Essig, 1911c, p. 600.

A. sp.

Aphis bakeri Cowen. Wilson, 1918, p. 191.
Aphis bakeri Gillette. Davidson, 1914, Vol. 7, p. 133.
Aphis senecio Swain. Swain, 1918a, p. 17.
Aphis sp. Davidson, 1909, p. 303.
Rhopalosiphum dianthi Schrank. Davidson, 1910, p. 378.
Rhopalosiphum persicae (Sulz.) Swain, 1919a, p. 160.

ANCHUSA.

A. italica Retz.

Aphis symphiti Schrank. Passerini, 1863, p. 40.

A. officinalis.

Aphis symphiti Schrank. Theobald, 1915b.

BORAGO.

B. officinalis L.

Aphis cardui Linn. Wilson, 1918, p. 205.
Aphis rumicis Linn. (fabae Kirby) (genistae Scopoli) (ulicis Fab.?) (euphorbiae Kalt.?) (dahliae Mosley) (Cinara rumicis Mosley) (Rumicifex Amyot) (Genistifex Amyot). Buckton, 2, p. 84.
Aphis silybi Pass. Ferrari, 1872, p. 71.
Aphis symphiti Schrank. Theobald, 1915b.

CORDIA.

C. myxa Linn.

Aphis gossypii Glover (malvae Koch) (cucurbiti Buckt.) (citrifolii Ashm.) (citrulli Ashm.) (cucumeris Forbes). van der Goot, 1916b, p. 93.

CYNOGLOSSUM. Hound's Tongue.

C. officinale L. Common Hound's Tongue.

Aphis adjecta Walker. Walker, 1849c, p. 46.
Aphis consors Walker. Walker, 1848a, p. 2218.
Aphis (Macrosiphum?) cynoglossi Walker. Theobald, 1913, p. 154.
Aphis particeps Walker. Walker, 1848c, p. 2217.
Aphis petasitidis Bûckton. Buckton, 2, p. 71.
Aphis pruni Koch (Aphis cardui Linn.). Dobrowljansky, 1913, p. 45.
Aphis socia Walker. Walker, 1848c, p. 2217.
Aphis sodalis Walker. Walker, 1848c, p. 2218.
Aphis symphiti Schrank. Wilson, 1918, p. 229.

C. sp.

Aphis cynoglossi Licht. (ined.) Lichtenstein, La Flore.
Aphis rumicis Linn. Wilson, 1918, p. 229.
Aphis tuberosae Boyer. Wilson, 1918, p. 229.
Cerataphis lataniae Boisduval (brasiliensis Hempel) (orchidearum Westwood). Schouteden, 1906a, p. 197.
Myzocallis cyperis Macchiati. Wilson, 1918, p. 229.
Phorodon cynoglossi Willliams. Williams, 1910 (1911), p. 89.
Rhopalosiphum dianthi Schrank. Davidson, 1910, p. 378.
Rhopalosiphum persicae Sulzer. Swain, 1919a, p. 164.

ECHINOSPERMUM.

E. lappula.

Aphis lappula Schrank. Wilson, 1918, p. 235.
Macrosiphum jaceae Linn. Wilson, 1918, p. 235.

ECHIUM. Viper's Bugloss.

E. vulgare L. Blue-weed. Blue Devil.

Aphis familiaris Walker (adjuvans) (adscita). Theobald, 1917a, p. 3.
Aphis lycopsidis (including *consucta*, the oviparous female; *adjusta*, the nymph; *suffragans*, the alate female; also, *conjuncta* and *basalis*). Theobald, 1917a, p. 3.
Aphis symphiti Schrank. Passerini, 1863, p. 40.
Macrosiphum jaceae Linn. Wilson, 1918, p. 235.

HELIOTROPIUM. Turnsole.

H. europaeum L.

Aphis heliotropii Macchiati. Schouteden, 1906a, p. 221.
Macrosiphum solani Kalt. Wilson, 1918, p. 251.

H. indicum Linn.

Aphis gossypii Glover (malvae Koch) (cucurbiti Buckt.) (citrifolii Ashm.) (citrulli Ashm.) (cucumeris Forbes). van der Goot, 1916b, p. 93.

H. peruvianum L.

Aphis dianthi Schrank. Walker, 1850a, p. 394.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 251.
Rhopalosiphum staphyleae Koch. Wilson, 1918, p. 251.

LITHOSPERMUM.

L. arvense.

Macrosiphum jaceae Linn. Wilson, 1918, p. 266.

L. fruticosum.

Macrosiphum jaceae Linn. Wilson, 1918, p. 266.

L. officinale.

Aphis cardui Linn. Wilson, 1918, p. 266.
Macrosiphum jaceae Linn. Wilson, 1918, p. 266.

L. pilosum Nutt.

Aphis lithospermii Wilson. Wilson, 1915b, p. 100.

LYCOPSIS. Bugloss.

L. arvensis L. Small Bugloss.

Aphis adjecta Walker. Wilson, 1918, p. 269.
Aphis adjucta Walker. Wilson, 1918, p. 269.
Aphis adjuta Walker. Walker, 1848c, p. 2220.
Aphis adjuvans Walker. Walker, 1848c, p. 2220.
Aphis adscita Walker. Walker, 1848c, p. 2220.
Aphis basalis Walker. Walker, 1848c, p. 2220.
Aphis bufo Walker. Walker, 1848b, p. 46.
Aphis conjuncta Walker. Walker, 1848c, p. 2220.
Aphis consucta Walker. Walker, 1848c, p. 2219.
Aphis familiaris Walker. Walker, 1848c, p. 2220.
Aphis lycopsidis Walker. Walker, 1848c, p. 2219.
Aphis suffragans Walker. Walker, 1848c, p. 2221.

MYOSOTIS. Scorpion-grass. Forget-me-not.

M. palustris Lam.

Aphis helichrysi Kalt. Wilson, 1918, p. 275.
Aphis myosotidis Koch. Passerini, 1863, p. 50. Theobald, 1911-12.
Aphis symphiti Schrank. Wilson, 1918, p. 275.

M. scorpiodes.

Aphis dianthi Schrank. Walker, 1850a, p. 394.
Aphis rumicis Linn. Walker, 1850a, p. 19.
Rhopalosiphum persicae Sulz. Wilson, 1918, p. 275.

M. sylvatica.

Aphis symphiti Schrank. Wilson, 1918, p. 275.

M. Welwitschii Boiss. Reut.

Anuraphis myosotidis Koch. Del Guercio, 1909 (1910), Redia, VII, p. 298.

NONNEA.

N. lutea Reichb.

Siphonophora malvae (Mosley) Pass. (A. pelargonii Kalt.) (A. pallida Walker) (S. pelargonii Koch) (S. diplantherae Koch). Passerini, 1863, p. 14.

ONOSMA.

O. stellulatum Waldst.

Aphis cardui Auct. Kalt. (onopordi Schrank) (chrysanthemi Koch) Ferrari, 1872, p. 68.

PULMONARIA.

P. officinalis.
Macrosiphum jaceae Linn. Wilson, 1918, p. 307.

RAMONA.

R. stachyoides. Black Sage.
Aphis ramona Swain. Swain, 1918a, p. 14.

SYMPHYTUM. Comfrey.

S. officinale L. Common Comfrey
Aphis consolidae Pass. Kaltenbach, 1875, p. 448.
Aphis symphiti Schrank. Passerini, 1863, p. 40. van der Goot, 1915, p. 235.

VERBENACEAE. VERVAIN FAMILY.

CLERODENDRON.

C. trichotomum Thunb.
Aphis gossypii Glover. Essig and Kuwana, 1918a, p. 39.
C. villosum Blume (trichotomum).
Aphis clerodendri Matsumura. Matsumura, 1917a, p. 356.

DURANTA.

D. ellisia. (D. plumieri).
Aphis nerii Kalt. Wilson, 1918, p. 234.
D. plumieri Jacq.
Aphis gossypii Glover (malvae Koch) (cucurbiti Buckt.) (citrifolii Ashm.) (citrulli Ashm.) (cucumeris Forbes). van der Goot, 1916b, p. 93, note p. 295.
D. sp.
Aphs durantae Theobald. Theobald, 1918a, p. 274.
Aphis durranti Das. Das, 1918a, p. 270.
Aphis malvoides Das. Das, 1918a, p. 270.
Aphis nerii Kalt. Lichtenstein, Flore Supplement.

LANTANA.

L. camara Linn.
Aphis gossypii Glover (malvae Koch) (cucurbiti Buckt.) (citrifolii Ashm.) (citrulli Ashm.) (cucumeris Forbes). van der Goot, 1916b, p. 93.
L. sp.
Forda myrmecaria Boisduval. Wilson, 1918, p. 261.

LIPPIA. (Aloysia).

L. citriodora H. B.

Myzus ribis Linn. (Aphis). Ferrari, 1872, p. 62.

Myzus targionii Del Guercio (Myzus ribis? Linn. Ferrari.). Del Guercio, 1900, p. 152.

TECTONA.

T. grandis Linn.

Aphis tectonae van der Goot. van der Goot, 1916b, p. 111.

VERBENA. Vervain.

V. aubletia.

Aphis aubletia Sanborn. Wilson, 1918, p. 350.

V. canadensis (L) Britton. (Aubletia Jacq.)

Aphis aubletia Sanborn. Sanborn, 1904, p. 49.

Aphis maidiradicis Forbes. Vickery, 1910, p. 104.

V. chamaedryfolia Juss.

Aphis capsellae Kalt. Macchiati, 1883, p. 238.

Aphis verbenae Macchiati. Macchiati, 1883, p. 258.

Rhopalosiphum persicae Pass. Passerini, Flora.

Siphonophora malvae (Mosley) Pass. (A. pelargonii Kalt.) (A. pallida Walker) (S. diplantherae Koch). Passerini, 1863, p. 14 and Passerini, Flora.

V. hastata L. Blue Vervain.

Aphis (Dactynus) verbena-hastata Raf. Rafinesque, 1818.

V. officinalis Linn. European Vervain.

Aphis capsellae Kalt. Passerini, 1863, p. 40.

Aphis rumicis Linn. Wilson, 1918, p. 350.

Aphis verbenae Macchiati. Macchiati, 1883, p. 258.

Macrosiphum verbenae Thomas. Wilson, 1918, p. 350.

V. sp.

Aphis malvae Walker. Buckton, 2, p. 43.

Myzus persicae Sulzer. Gillette and Taylor, 1908, p. 35.

Siphonophora verbenae Thomas. Thomas, 1879, p. 63.

VITEX.

V. Agnus-castus L.

Aphis viticis Ferrari. Ferrari, 1872, p. 67.

V. negundo.

Aphis durranti Das. Das, 1918a, p. 273.

Aphis malvoides Das. Das, 1918a, p. 273.

LABIATAE. MINT FAMILY.

AJUGA. Bugle Weed.

A. genevensis.
Myzus ajugae Schouteden. Wilson, 1918, p. 187.
A. reptans L.
Myzus ajugae Schouteden. Schouteden, 1906a, p. 231.

AUDIBERTIA. (Ramona).

A. stachyoides Benth. Black Sage.
Aphis ramona Swain. Swain, 1918a, p. 14.

BALLOTA. Fetid Horehound.

B. nigra L. Black Horehound.
Aphis ballotae Pass. Passerini, 1860, p. 35.
Aphis scabiosae Kalt. Buckton, 2, p. 55.
Macrosiphum hieracii Schrank. Wilson, 1918, p. 201.

BRUNELLA.

B. vulgaris.
Aphis brunellae Schouteden. Wilson, 1918, p. 207.

CALAMINTHA.

C. acinos.
Aphis clinopodii Pass. Wilson, 1918, p. 208.
Aphis origani Pass. Wilson, 1918, p. 208.
C. clinopodium Benth.
Aphis clinopodii Pass. Passerini, 1863, p. 36.
Aphis origani Pass. Passerini, 1860, p. 36.
Phorodon calaminthae Macchiati. Zoological Record, 1885, p. 240.
C. Nepeta Savi. (Satureja Nepeta).
Aphis origani Pass. Kaltenbach, 1874, p. 479.
C. sp.
Aphis nepeta Kalt. Lichtenstein, La Flore.
Rhopalosiphum calaminthae Licht. (ined.). Lichtenstein, La Flore.

COLEUS.

C. aromaticus Benth.
Phorodon minutum van der Goot. van der Goot, 1916b, p. 43.

GALEOPSIS. Hemp Nettle.

G. Ladanum L. Red Hemp Nettle.
Aphis quaerens Walker. Walker, 1849c, p. 48.
Aphis symphiti Schrank. Passerini, 1863, p. 40.
Phorodon galeopsidis Kalt. Wilson, 1918, p. 246.
Rhizobius sonchi Pass. Passerini, 1863, p. 80.

G. Tetrahit L. (bifida). Common Hemp Nettle.
Myzus ribis Linn. (Aphis galeopsidis Kalt.) (?Myzus whitei Theobald) (?M. dispar Patch) Haviland, 1919b, p. 98.
Phorodon galeopsidis (Kalt.) Pass. Buckton, 1, p. 173.

G. versicolor Curt.
Aphis galeopsidis Kalt. Kaltenbach, 1874, p. 484.

G. sp.
Myzus galeopsidis Kalt. (laurii van der Goot). van der Goot, 1915, p. 109.

LAMIUM. Dead Nettle.

L. album L.
Aphis helichrysi Kalt. Wilson, 1918, p. 261.
Aphis odorikonis Matsumura. Matsumura, 1917a, p. 357.
Phorodon galeopsidis (Kalt.) (Aphis). Buckton, 1, p. 173.

L. amplexicaule L. Henbit.
Aphis galeopsidis Kalt. Kaltenbach, 1874, p. 484.
Phorodon galeopsidis Kalt. Wilson, 1918, p. 261.

L. maculatum.
Aphis helichrysi Kalt. Wilson, 1918, p. 261.

L. purpureum L.
Aphis balsamitae Muller. Wilson, 1918, p. 261.
Aphis helichrysi Kalt. Wilson, 1918, p. 261.
Aphis lamii Koch. Wilson, 1918, p. 261.
Aphis rumicis Linn. Walker, 1850a, p. 19.
Chaitophorus montemartini Del Guercio. Wilson, 1918, p. 261.
Macrosiphum lamii Theobald. Theobald, 1915b, reprint p. 6.
Myzus galeopsidis Kalt. (Phorodon galeopsidis Licht.) (Myzus lamii van der Goot). van der Goot, 1915, p. 109.
Myzus lamii van der Goot. Wilson, 1918, p. 261.
Phorodon galeopsidis (Kalt.) Pass. (Walker ex parte). Passerini, 1863, p. 19.

L. sp.
Aphis lamii Koch. Kaltenbach, 1874, p. 483.
Myzus ribis Linn. (Aphis galeopsidis Kalt.) (?Myzus whitei Theobald) (?M. dispar Patch). Haviland, 1919b, p. 80.
Pterocomma farinosus Del Guercio. Wilson, 1918, p. 261.
Rhopalosiphum hippohaes (galeopsidis Kalt.). Gillette, 1915, Jour. Ec. Ent. Vol. 8, p. 375.

LEONURUS.

L. cardiaca.

Aphis helichrysi Kalt. Wilson, 1918, p. 265.
Aphis plantaginis Schrank. Wilson, 1918, p. 265.
Phorodon galeopsidis Kalt. Wilson, 1918, p. 265.

L. sp.

Myzus ribis (Linn.). Gillette and Bragg, 1917b, p. 340.

LEUCAS.

L. lavandulaefolia Sm.

Aphis gossypii Glover. (malvae Koch) (cucurbiti Buckt.) (citrifolii Ashm.) (citrulli Ashm.) (cucumeris Forbes). van der Goot, 1916b, p. 93, note p. 295.

L. sp.

Aphs malvae Koch. Das, 1918a, p. 271.

MARRUBIUM. Horehound.

M. sp.

Aphis ballotae Pass. Lichtenstein, La Flore.

MENTHA. Mint.

M. aquatica L. (hirsuta).

Aphis dianthi Schrank. Walker, 1850a, p. 394.
Aphis menthae Walker. Walker, 1852, p. 1045.
Aphis rumicis Linn. Walker, 1850a, p. 19.
Aphis tentans Walker. Walker, 1852, p. 1045.
Kaltenbachiella menthae Schouteden. Theobald, 1915b, reprint p. 7.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 273.

M. arvensis L.

Aphis maidiradicis Forbes. (menthae-radicis Cowen). Vickery, 1910, p. 103.
Aphis menthae Walker. Kaltenbach, 1874, p. 474.
Aphis menthae-radicis Cowen. Wilson, 1918, p. 273.
Kaltenbachiella menthae Schouteden. Schouteden, 1906a, p. 196.
Macrosiphum menthae Buckton. Wilson, 1918, p. 273.
Phorodon menthae Buckton (Siphonophora menthae Buckton?). van der Goot, 1915, p. 135.
Rhizobius menthae Pass. Ferrari, 1872, p. 84.

M. canadensis L.

Aphis menthae-radicis Cowen. Cowen, 1895, p. 121.
Siphonophora menthae Buckton. Wiliams, 1891, p. 18.

M. hirsuta.

Aphis menthae Walker. Wilson, 1918, p. 273.

M. longifolia.

Aphis capsellae Kalt. Wilson, 1918, p. 273.

M. piperita.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 273.
M. pulegium L.
Aphis pulegi Del Guercio. Del Guercio, 1909 (1910), Redia, VII, p. 298.
M. spicata. (M. sylvestris).
Macrosiphum menthae Buckton. Wilson, 1918, p. 273.
M. sylvestris L.
Aphis capsellae Kalt. Passerini, 1863, p. 40.
Aphis clinipodii Pass. Wilson, 1918, p. 273.
Kaltenbachiella menthae Schout. Wilson, 1918, p. 273.
Macrosiphum menthae Buckton. Wilson, 1918, p. 273.
Phorodon menthae Buckton. (Siphonophora menthae Buckton?) van der Goot, 1915, p. 135.
M. viridis L.
Aphis affinis Del Guercio. Del Guercio, 1909 (1910) Redia VII, p. 298.
Siphonophora menthae Buckton. Buckton, 1, p. 121.

MONARDA. Horse Mint.

M. fistulosa L. Wild Bergamot.
Aphis monardae Oestlund. Oestlund, 1887, p. 58.
Phorodon monardae Williams. Hunter, 1901, p. 111. Williams, 1910 (1911), p. 89.
M. punctata L. Horse Mint.
Aphis monardae Oestlund. Hunter, 1901, p. 101.

NEPETA. (Glechoma). Cat Mint.

N. Cataria L. Catnip.
Aphis nepetae Kalt. Kaltenbach, 1843, p. 77.
N. glechoma.
Aphis gladioli Felt. Wilson, 1918, p. 276.
Aphis glechomae Walker. Wilson, 1918, p. 276.
N. hederaceae (L.) Trevisan (glechoma Benth). Ground Ivy. Gill-over-the Ground.
Aphis glechomae Walker. Walker, 1848c, p. 2247.
Aphis gossypii Glover (citrifolii Ashmead in part) (citrulli Ashm.) (cucumeris Forbes) (forbesi Weed?). Pergande 1895, p. 314.
N. sp.
Aphis malvae Koch. Das, 1918a, p. 272.

ORIGANUM. Wild Marjoram.

O. paniculatum Koch.
Aphis origani Pass. Passerini, 1860, p. 36.

O. vulgare L. Wild Marjoram.
Aphis nepeta Kalt. Kaltenbach, 1874, p. 479.
Aphis origani Pass. Bayer, 1914a, p. 150.
Aphis rhamni Kalt. (frangulae Koch). Ferrari, 1872, p. 69.

PRUNELLA. (Brunella). Self-heal.

P. vulgaris L. Heal-all. Carpenter-weed.
Aphis brunellae Schouteden. Schouteden, 1906a, p. 217.

RAMONA. See Audibertia.

SALVIA. Sage.

S. aethiopis.
Aphis salviae Walker. Wilson, 1918, p. 326.
S. ceratophylloides L.
Aphis salviae Walker. Wilson, 1918, p. 326.
Rhopalosiphum elegans Ferrari. Macchiati, 1883, p. 233.
S. pratensis L.
Aphis salviae Walker. Walker, 1852, p. 1043. Kaltenbach, 1874, p. 477.
S. rectiflora.
Rhopalosiphum elegans Ferrari. Zoological Record, 1872, p. 418.
S. splendens. Ker.—Gawl.
Cerosipha passeriniana Del Guercio. Del Guercio, 1900, p. 115.

SATUREJA.

S. nepeta. (Calamintha nepeta).
Aphis nepetae Kalt. Wilson, 1918, p. 327.
Aphis origani Pass. Wilson, 1918, p. 327.
S. vulgaris. (Calamintha vulgaris).
Aphis clinipodii Pass. Wilson, 1918, p. 328.
Aphis nepetae Kalt. Wilson, 1918, p. 328.
Aphis origani Pass. Wilson, 1918, p. 328.
Macrosiphum solani Kalt. Wilson, 1918, p. 328.
Phorodon calaminthae Macchiati. Wilson, 1918, p. 328.

SCUTELLARIA. Skullcap.

S. Drummondii Benth.
Aphis maidiradicis Forbes. Vickery, 1910, p. 104.
S. galericulata L.
Aphis chloris Koch. Passerini, 1863, p. 39.

STACHYS. Hedge Nettle.

S. annua L.
Rhizobius sonchi Pass. Kaltenbach, 1874, p. 484.
S. arvensis L.
Phorodon galeopsidis Kalt. Macchiati, 1883, p. 232.
S. germanica.
Phorodon galeopsidis Kalt. Wilson, 1918, p. 339.
S. recta L.
Aphis chloris Koch. Ferrari, 1872, p. 65.
Aphis eupatorri Pass. Ferrari, 1872, p. 64.
Aphis symphiti Schrank. Passerini, 1863, p. 40.
Aphis urticae Fabr. Wilson, 1918, p. 339.
Phorodon galeopsidis Kalt. Wilson, 1918, p. 339.
S. sylvatica L.
Aphis urticae Fabr. Wilson, 1918, p. 339.
Aphis urticaria Kalt. Wilson, 1918, p. 339.
Myzus galeopsidis (Kalt.) (Phorodon galeopsidis Licht.) (Myzus lamii van der Goot). van der Goot, 1915 ,p. 109.
Phorodon galeopsidis (Kalt.) Pass. Buckton, 1, p. 173.
S. sp.
Macrosiphum ludovicianae Oestlund. Swain, 1919a, p. 175.
Myzus circumflexus Buckton. Swain, 1919a, p. 175.
Myzus ribis (Linn.). Gillette and Bragg, 1917b, p. 340.
Rhopalosiphum hippohaes (galeopsidis Kalt.). Gillette, 1915, Jour. Ec. Ent. Vol. 8, p. 375.

TEUCRIUM.

T. chamaedrys. Germander.
Phorodon chamaedrys Pass. Wilson, 1918, p. 342.
T. laciniatum Torr.
Aphis maidiradicis Forbes. Vickery, 1910, p. 104.
T. scorodonia L.
Aphis scorodoniae Del Guercio. Del Guercio, 1909 (1910), Redia VII, p. 298.
T. sp.
Aphis teucrii Licht. (ined.). Lichtenstein, La Flore.
Phorodon calaminthae Macchiati. Wilson, 1918, p. 342.
Phorodon chamaedrys Pass. Lichtenstein, La Flore.

THYMUS (Serpyllum) Thyme.

T. Serpyllum L. Creeping Thyme.
Aphis rumicis Linn. Wilson, 1918, p. 343.
Aphis serpylli Koch. Kaltenbach, 1874, p. 480. Del Guercio, 1909 (1910) Redia VII, p. 297.

SOLANACEAE. NIGHTSHADE FAMILY.

ATROPA.

A. Belladonna L.

Macrosiphum atropae Mordwilko.
Macrosiphum solani Kalt. Wlison, 1918, p. 200.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 200.

CAPSICUM. Pepper.

C. annum L.

Aphis gossypii Glover. (malvae Koch) (cucurbiti Buckt.) (citrifolii Ashm.) (citrulli Ashm.) (cucumeris Forbes). van der Goot, 1916b, p. 93.
Macrosiphum solanifolii (Ashmead). Houser, 1917a, p. 68.
Myziodes persicae Sulzer. (A. dianthi Kalt.) (Megoura solani Thos.) (Siphonophora achyrantes Monell) (Myzus malvae Oestl.). van der Goot, 1916b, p. 48.
Rhopalosiphum dianthi Schrank. Davidson, 1910, p. 378.

CYPHOMANDRA.

C. betacea Sendt.

Aphis gossypii Glover. (malvae Koch) (cucurbiti Buckt.) (citrifolii Ashm.) (citrulli Ashm.) (cucumeris Forbes). van der Goot, 1916b, p. 93, note 295.
Aphis nerii Kalt. Passerini, 1863, p. 45.
Aphis rumicis Linn. Walker, 1850a, p. 19.

DATURA. Jamestown Weed. Jimson Weed. Thorn Apple.

D. stramonium L. Stramonium.

Aphis gossypii Glover. (citrifolii Ashm. in part) (citrulli Ashm.) (cucumeris Forbes) (forbesi Weed?). Pergande, 1895, p. 314.
Aphis rumicis Linn. Wilson, 1918, p. 231.
Macrosiphum solanifolii (Ashmead). Houser, 1917a, p. 68.
Myzus persicae (Sulzer). Das, 1918a, p. 270.

D. tatula L. Purple Thorn Apple.

Macrosipuhm solanifolii Ashmead. Smith, 1919a, p. 51.

D. sp.

Aphis papaveris Fab. Kaltenbach, 1874, p. 269.

HYOSCYAMUS. Henbane.

H. niger.

Aphis hyosciami Kittel. Wilson, 1918, p. 255.
Macrosiphum ulmariae Schrank. Wilson, 1918, p. 255.
Rhopalosiphum dianthi Schrank. Wilson, 1918, p. 255.

H. sp.

Siphonophora solani Kalt. Lichtenstein, Flore Supplement.

LYCIUM. Matrimony Vine.

L. europaeum L.

Chaitophorus xanthomelas Koch. "veilleicht zufallig dahin gekommen." Koch, p. 2.

L. halimifolium Mill. Matrimony Vine.

Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 51.

L. sp.

Macrosiphum solanifolii (Ashmead). Houser, 1917a, p. 69.

LYCOPERSICUM.

L. esculentum Mill. (lycopersicon L.) Tomato.

Aphis cucumeris Forbes. Williams, 1891, p. 25.
Aphis gossypii Glover. Wilson, 1918, p. 269.
Aphis rumicis Linn. Walker, 1850a, p. 19.
Lachnus subterraneous Del Guercio. Wilson, 1918, p. 269.
Macrosiphum lycopersicella Theobald. Wilson, 1918, p. 269.
Macrosiphum lycopersici Clarke. Wilson, 1918, p. 269.
Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 51.
Macrosiphum tabaci Pergande. Wilson, 1918, p. 269.
Macrosiphum sp. Sanborn, 1904, p. 79.
Megoura solani Thomas. Thomas, 1879, p. 73. (Myzus persicae Sulz.?) See Gillette and Taylor, 1908, p. 34.
Megoura solani Buckton. Williams, 1891, p. 25.
Myzus (Nectarophora) lycopersici Clarke. Davis, 1914, p. 134. Can. Ent.
Myzus persicae Sulzer. Gillette and Taylor, 1908, p. 35.
Rhopalosiphum (Megoura) solani (Thomas). Oestlund, 1887, p. 76.

L. sp.

Macrosiphum solani Kalt. Matsumura, 1917a, p. 361.

NICOTIANA. Tobacco.

N. rustica. Wild Tobacco.

Aphis scabiosae Scopoli. Wilson, 1918, p. 276.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 276.
Siphonophora scabiosae (Schrank). Buckton, 1, p. 113.

N. Tabacum L. Tobacco.

Aphis amygdali Boyer. (persicae Boyer) . Buckton, 2, p. 106.
Aphis malvae Walker. Buckton, 2, p. 43.
Aphis scabiosae Schrank. Cholodkovsky, 1910, p. 146.
Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 51.
Myzoides persicae Sulz. (dianthi Kalt.) (solani Thos.) (achyrantes

Monell) (malvae Oestl.). van der Goot, 1916b, p. 48.
Myzus persicae Sulzer. Gillette and Taylor, 1908, p. 35.
Myzus persicae (Sulzer). Das, 1918a, p. 168.
Nectarophora tabaci Pergande. Pergande, 1898, p. 300.
Phorodon carduinum Pass. Cholodkovsky, 1910, p. 145.
Rhopalosiphum dianthi (Schrank) Koch (persicae Puceron du pecher Morren) (rapae Curtis) (floris rapae Curtis) (dubia Curtis) (vastator Smee) (persicaecola Boisduval). Buckton, 2, p. 17.
Siphocoryne avenae (Fab.) Das, 1918a, p. 272.

N. sp.
Rhizobius (ined.) Passerini. Lichtenstein, Flore Supplement.

PHYSALIS. Ground Cherry. Husk Tomato.

P. peruviana L.
Macrosiphum circumflexum (Buckton). Fullaway, 1909, p. 27.
P. pruinosa L. Strawberry Tomato.
Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 51.
P. virginiana Mill. Virginia Ground Cherry.
Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 50.
P. viscosa L.
Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 51.
P. sp.
Macrosiphum solani Kalt. Matsumura, 1917a, p. 361.
Macrosiphum solanifolii Ashmead. Webster, 1915a, p. 405.

SCHIZANTHUS.

S. sp.
Macrosiphum circumflexum Buckton. Theobald, 1913, p. 55.

SOLANUM. Nightshade.

S. carolinense L. Horse Nettle.
Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 51.
S. dulcamara.
Aphis rumicis Linn. Wilson, 1918, p. 334.
Aphis solani Kittel. Wilson, 1918, p. 334
Rhopalosiphum dianthi Schrank. Wilson, 1918, p. 334.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 334.
S. elaeagnifolium.
Aphis solanina Pass. Wilson, 1918, p. 334.
S. giganteum.
Aphis scabiosae Scopoli. Wilson, 1918, p. 334.
S. guianense Dun.
Aphis silybi Pass. Passerini, Flora.

S. integrifolium Poir. (texanum).
Aphis solanina Pass. Passerini, 1863, p. 41.

S. jasminoides Paxt.
Aphis rumicis Linn. Wilson, 1918, p. 334.
Macrosiphum solani Kaltenbach. Del Guercio, 1909 (1910), Redia VII, p. 298.
Macrosiphum solanifolii Ashmead. Smith, 1919a, p. 51.

S. lycopersicum.
Aphis malvoides Das. Das, 1918a, p. 273.
Lachnus incertus Schouteden. (S. subterraneus Del Guercio). Del Guercio, 1907, (1908) Redia V, p. 345; Del Guercio, 1900, p. 109; Schouteden, 1906a, p. 203.
Myzus persicae (Sulzer). Das, 1918a, p. 168.

S. Melongena L. Egg Plant.
Aphis gossypii Glover. Essig and Kuwana, 1918a, p. 42.
Aphis malvoides Das. Das, 1918a, p. 273.
Macrosiphum solanifolii (Ashmead). Patch, 1915e, p. 214.
Myzus pergandii Sanderson. Sanderson, 1901a, p. 73.
Myzus persicae Sulzer. Gillette and Taylor, 1908, p. 35.
Nectarophora cucurbitae Thomas. Hunter, 1901, p. 114.
Nectarophora tabaci Pergande. Pergande, 1898, p. 300.

S. nigrum L. (Dilleni) (douglasii). Common Nightshade.
Aphis maidiradicis Forbes. Vickery, 1910, p. 104.
Aphis malvae Koch. Das, 1918a, p. 273.
Aphis nerii Kalt. Wilson, 1918, p. 334.
Aphis papaveris Fab. (thlaspeos Schrank) (aparinae) (fabae Scopoli) Ferrari, 1872, p. 71.
Aphis rumicis Linn. Das, 1918a, p. 273.
Aphis silybi Pass. Passerini, 1863, p. 44.
Aphis solani Kittel. Wilson, 1918, p. 334.
Rhopalosiphum persicae Sulzer. Wilson, 1918, p. 334.
Siphonophora solani Kalt. Macchiati, 1883, p. 231.
Trifidaphis (Pemphigus) radicicola (Essig) Del Guercio. Essig, 1909, p. 75; also 1910, p. 283.

S. Sodomeum L.
Aphis solanina Pass. Macchiati, 1883, p. 257.

S. Texanum Dnn.
Aphis solanina Pass. Passerini, Flora.

S. torvum.
Aphis gossypii Glover. van der Goot, 1918b.

S. tuberosum L. Potato.
Aphis cucumeris Forbes. Williams, 1891, p. 21.
Aphis gossypii Glover. Wilson, 1918, p. 335.
Aphis papaveris Fab. Wilson, 1918, p. 335.
Aphis rosae. Zoological Record, 1867, p. 483 and 1869, p. 501.
Aphis rumicis Linn. Williams, 1891, p. 21.
Aphis solani Kalt. Kaltenbach, 1843, p. 15. Theobald, 1911-12.

Aphis solanina Pass. Theobald, 1919a, p. 5.
Aphis urticaria Kalt. Buckton, 2, p. 51.
Macrosiphum lactucae Schrank. Theobald, 1913, p. 55.
Macrosiphum lactucae Linn. Wilson, 1918, p. 335.
Macrosiphum solani Kaltenbach. Theobald, 1913, p. 55.
Macrosiphum solanifolii Ashmead. Patch, 1907, pp. 235-254.
Macrosiphum sonchi Linn. Theobald, 1913, p. 55.
Myzus persicae Sulzer. (R. solani Thomas?). Gillette and Taylor, 1908, p. 34.
Rhopalosiphum dianthi (Schrank) Koch. (persicae Puceron du pecher Morren) (rapae Curtis) (A. floris rapae Curtis) (dubia? Curtis) (vastator Smee) (persicaecola Boisduval) (Rh. persicae Pass.) Buckton, 2, p. 17.
Rhopalosiphum tuberosellae Theobald. Theobald, 1919a, p. 5.
Trifidaphis radicicola Essig. Essig, 1912a, p. 699.
Tychea phaseoli Pass. Karsch, 1886, p. 1.

S. villosum.

Aphis solani Kittel. Wilson, 1918, p. 335.

S. sp.

Amphorophora latysiphon Davidson. Swain, 1919a, p. 174.
Aphis gossypii Glover (malvae Koch) (cucurbiti Buckt.) (citrifolii Ashm.) (citrulli Ashm.) (cucumeris Forbes). van der Goot, 1916b, p. 93.
Aphis solanella Theobald. Wilson, 1918, p. 334.
Aphis solani Kalt. Kaltenbach, 1874, p. 454.
Megoura solani Thomas. Wilson, 1918, p. 334.
Myzoides persicae Sulzer (dianthi Kalt.) (solani Thos.) (achyrantes Monell) (malvae Oestl.). van der Goot, 1916b, p. 48.
Myzus circumflexus Buckton. Swain, 1919a, p. 174.
Rhopalosiphum lactucae Kalt. Swain, 1919a, p. 174.
Rhopalosiphum persicae (Sulzer). Pass. (A. dianthi Schrank) (A. vulgaris Kyber) (A. rapae Curtis) (A. dubia Curt.) (A. vastator Smee). Passerini, 1863, p. 20.

WITHANIA.

W. somniferum.

Aphis malvae Koch. Das, 1918a, p. 274.
Aphis malvoides Das. Das, 1918a, p. 151.
Myzus persicae (Sulzer). Das, 1918a, p. 168.